Please check the examination details below before entering your candidate information

Candidate surname	Other names

Centre Number

Learner Registration Number

Pearson BTEC Level 3 Nationals Extended Certificate

Supervised hours 3 hours

Paper reference **21327L**

Applied Human Biology

UNIT 3: Human Biology and Health Issues

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Answer **all** activities.
- Answer the activities in the spaces provided – *there may be more space than you need.*
- This booklet contains materials for the completion of the set task under supervised conditions.
- This booklet is specific to each series and this material must be issued only to learners who have been entered to undertake the set task in the relevant series.
- This booklet should be kept securely until the start of the 3-hour supervised assessment period.
- This set task should be undertaken in a session timetabled by Pearson.

Information

- The total mark for this paper is 60.
- The marks for **each** activity are shown in brackets – *use this as a guide as to how much time to spend on each activity.*

Advice

- Read each activity carefully before you start to answer it.
- Try to answer every activity.
- Check your answers if you have time at the end.

Turn over ▶

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Pearson

Instructions for teachers/tutors and/or invigilators

Centres must issue this booklet at the appropriate time and advise learners of the timetabled session.

All learner work must be completed independently under the supervision of the teacher/tutor and/or invigilator.

Learners are advised to spend 30–45 minutes reading through the stimulus material in the set task and annotate the material if they wish to do so.

Learners are required to use the stimulus material to complete the activities.

Learners must complete the set task using this task and answer booklet.

Teachers/tutors and/or invigilators should note that:

- learners must not be given any direct guidance or prepared materials
- all work must be completed independently by the learner
- learners must not bring anything into the supervised environment or take anything out without the approval of the teacher/tutor and/or invigilator.

Centres are responsible for putting in place appropriate checks to ensure that only permitted material is introduced into the supervised environment.

Maintaining security

- During supervised assessment session, the assessment areas must only be accessible to the individual learners and to named members of staff.
- Learners can only access their work under supervision.
- Any work that learners produce under supervision must be kept securely.
- Only permitted materials for the set task can be brought into the supervised environment.
- During any permitted break, and at the end of the session, materials must be kept securely and no items removed from the supervised environment.
- Learners are not permitted to have access to the internet or other resources during the supervised assessment period.

The set task is a formal external assessment and must be conducted with reference to the instructions in this task and answer booklet and to the *BTEC Instructions for Conducting External Assessments (ICEA)* document.

Outcomes for submission

This task and answer booklet should be submitted to Pearson.

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Instructions for learners

Read the set task information carefully.

You are advised to spend 30–45 minutes reading through the article in the set task.

You may add notes to the article before you start the activities.

Complete all your work in this task and answer booklet in the spaces provided.

This session is three hours. Your teacher/tutor or invigilator will tell you if there is a supervised break. Plan your time carefully.

In your response to the activities, you should consider information from the article and use your knowledge and understanding of applied human biology principles, procedures and techniques to support your answers.

You will complete this set task under supervision and your work will be kept securely during any breaks taken.

You must work independently throughout the supervised assessment period and you must not share your work with other learners.

You may ask your teacher/tutor or invigilator to explain any words or sentences you do not understand in the article or the activities. Your teacher/tutor or invigilator cannot help you complete the set task.

Outcome for submission

This task and answer booklet should be submitted to Pearson.

Set task information

You are given the following article:

Fighting STIs with Education, Diagnosis and Treatment.

You need to read the article so that you get an understanding of the health issue involved.

You should be able to interpret, analyse and evaluate the article.

At the end of the article, there is a glossary giving the meanings of some of the words in bold used in the article.

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Fighting STIs with Education, Diagnosis and Treatment.

Introduction

Sexually transmitted infections (STIs) are a major health issue. In 2015 over a billion people worldwide were diagnosed with an STI[1]. The World Health Organization (WHO) estimates that a million new infections are diagnosed daily[2]. STIs can be passed from one person to another through sexual contact[3] and infections can affect both men and women. However, not everyone is equally affected by STIs. In the UK, between 2009 and 2018, there were over 164,000 more STIs diagnosed in men than in women[4].

STIs can cause a wide range of health problems ranging from short-term to long-term illnesses[5]. In women, some STIs can cause **infertility** or **miscarriage**. STIs can also increase risks to a pregnant woman's unborn child, including brain damage, blindness, deafness, and sometimes **stillbirth**. STIs can pass from mother to child during pregnancy or birth. In 2018, the three most common STIs in England were syphilis, chlamydia, and gonorrhoea[5].

Syphilis

In 2018, the Daily Mail newspaper reported on research from the Terrence Higgins Trust (THT), the UK's leading sexual health charity, and the British Association for Sexual Health and HIV (BASHH)[6]. The report stated that cases of syphilis jumped by 165% between 2009 and 2018. The report also said that syphilis now affects far more men than women. Figure 1 shows a graph using data from the THT/BASHH report.

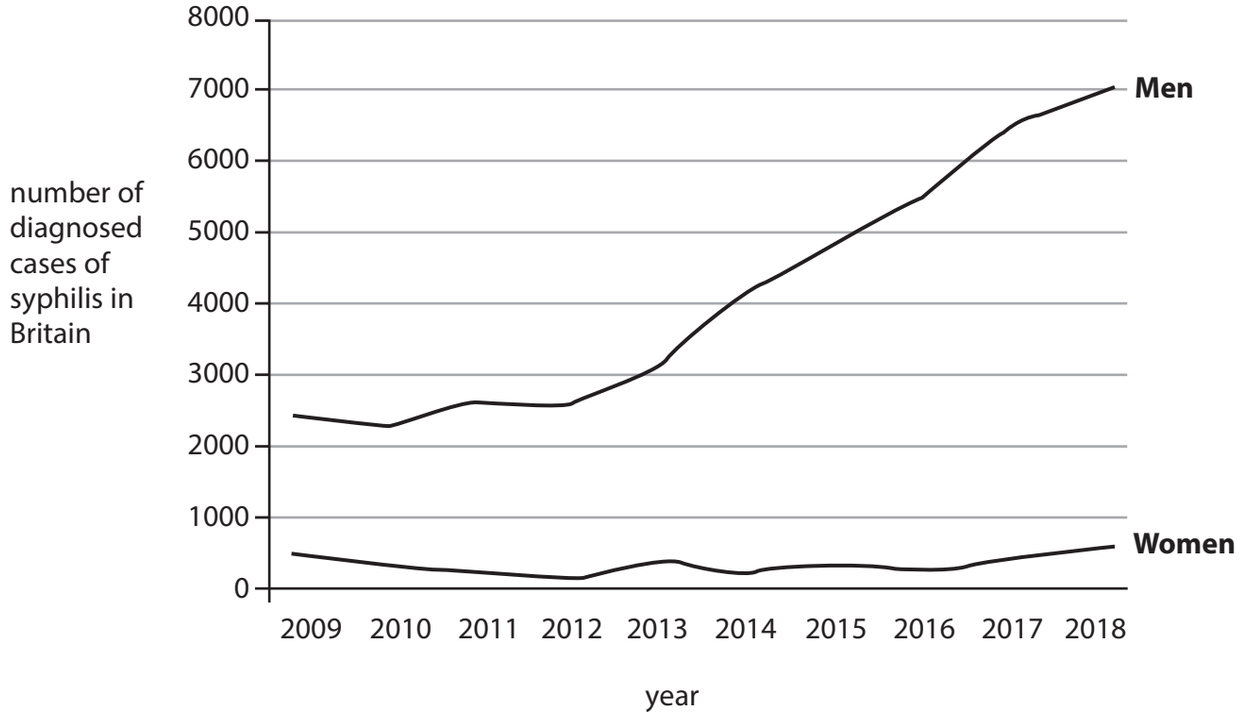

Figure 1

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Syphilis is a bacterial infection that can be treated successfully with antibiotics if diagnosed early. As with many STIs, the symptoms of syphilis are significantly more obvious in men and, as such, can be more readily diagnosed. During the primary stage, a syphilis sore (called a **chancre**) develops between 3 weeks and 3 months after the initial infection. The chancre is where the syphilis infection enters the body and can develop on the genitals. Chancres are usually firm, round, and painless, but can sometimes be open and wet. Bacteria from chancres can be easily passed from person to person via sexual contact, which makes syphilis a very contagious disease at this point.

Although the chancre only lasts three to six weeks, unless treated syphilis will progress to the secondary stage. Symptoms of the secondary stage include new sores, rashes, weight loss, hair loss, and mild flu-like symptoms.

If the syphilis infection continues to develop untreated it can move into the dangerous late stages. Late stages of syphilis can cause tumours, blindness, dementia and paralysis. Late-stage syphilis can also damage the nervous system, brain, and other organs, and can even be fatal[7]. The complications from late-stage syphilis can happen 10–20 years after the initial infection and are irreversible.

Chlamydia

Chlamydia is the most common bacterial STI in England. Figure 2 shows that, according to UK Government statistics[8], more women have been diagnosed with chlamydia than men every year going back to at least 2009. In 2018, there were 121,953 new diagnoses of chlamydia in women compared to 84,412 new diagnoses for men.

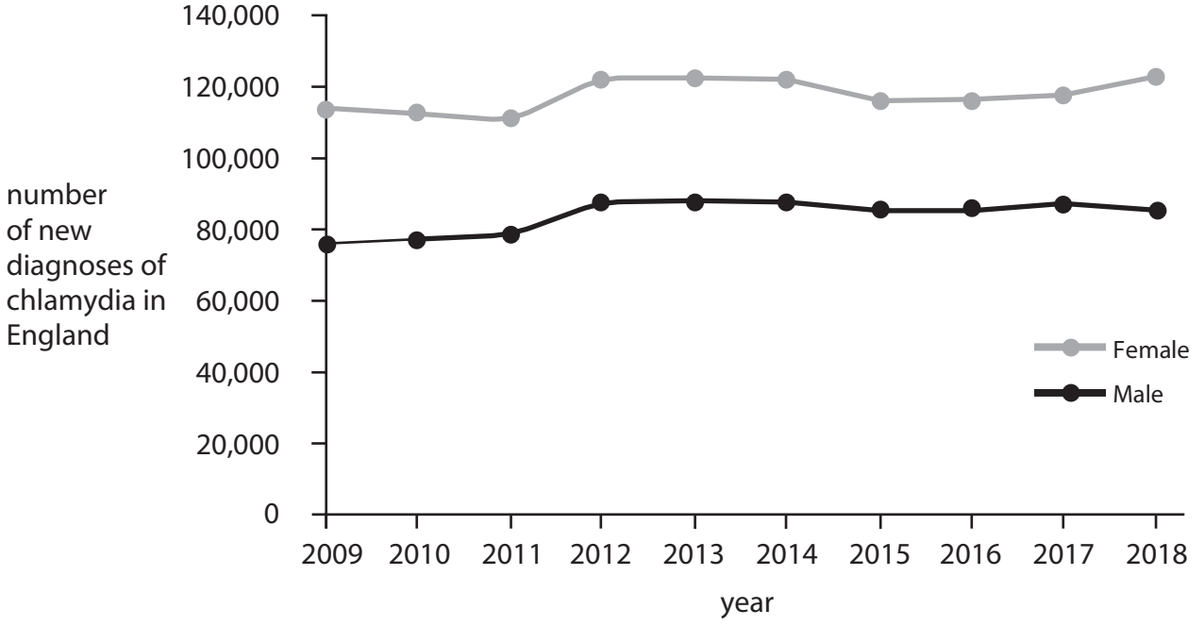

Figure 2

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The common symptoms of chlamydia include pain when urinating and unusual discharge from the vagina or penis. Men can also experience pain and swelling in the testicles while women can also experience pain in the abdomen, bleeding after sexual intercourse and bleeding between periods. If left untreated in women, chlamydia can cause **pelvic inflammatory disease (PID),** infertility and chronic pain. It is thought that up to 70% of infected women have only mild symptoms and many may not even notice they have been infected[9]. This can lead to the disease going undiagnosed and cause the carriers of the infection to unknowingly spread the disease further.

One of the reasons why STIs such as chlamydia can have an additional impact on women is because of the female anatomy[10]. The lining of the vagina is thinner and more delicate than the skin on a penis, so it is easier for bacteria and viruses to enter the female body or be transmitted. The interior of the vagina also provides a warm, moist environment for bacteria to grow, and signs of infection may be difficult to notice. If an STI leads to infertility or miscarriage, there can be a significant negative effect on the woman's mental health.

There are potential risks to unborn children if the mother has an undiagnosed STI. Therefore, the NHS recommends that pregnant women be tested at their first **prenatal appointment** for a number of STIs including chlamydia, HIV, and hepatitis B[11]. While there is a risk that women with genital herpes and HIV can pass their infection on to the baby during birth, there are steps that can be taken to greatly reduce this risk.

What is stopping us from reducing STIs?

Symptoms of STIs should not be ignored and should be discussed with a doctor so that the infection can be treated before more serious symptoms develop. Unfortunately, common symptoms of STIs, especially in women, are not always recognised. A woman may not be aware of a change in vaginal discharge, while itching and irritation can be the result of a common yeast infection or even a mild reaction to a new product, such as laundry detergent. Therefore, diagnosis from symptoms alone is not always a reliable way to know if a woman has an STI.

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Figure 3 shows results from a study published in the British Medical Journal in 2010. This study showed that women tend to consult their doctor more often than men[12], although this does not guarantee that an STI will be discovered during a routine appointment or while diagnosing an unrelated illness.

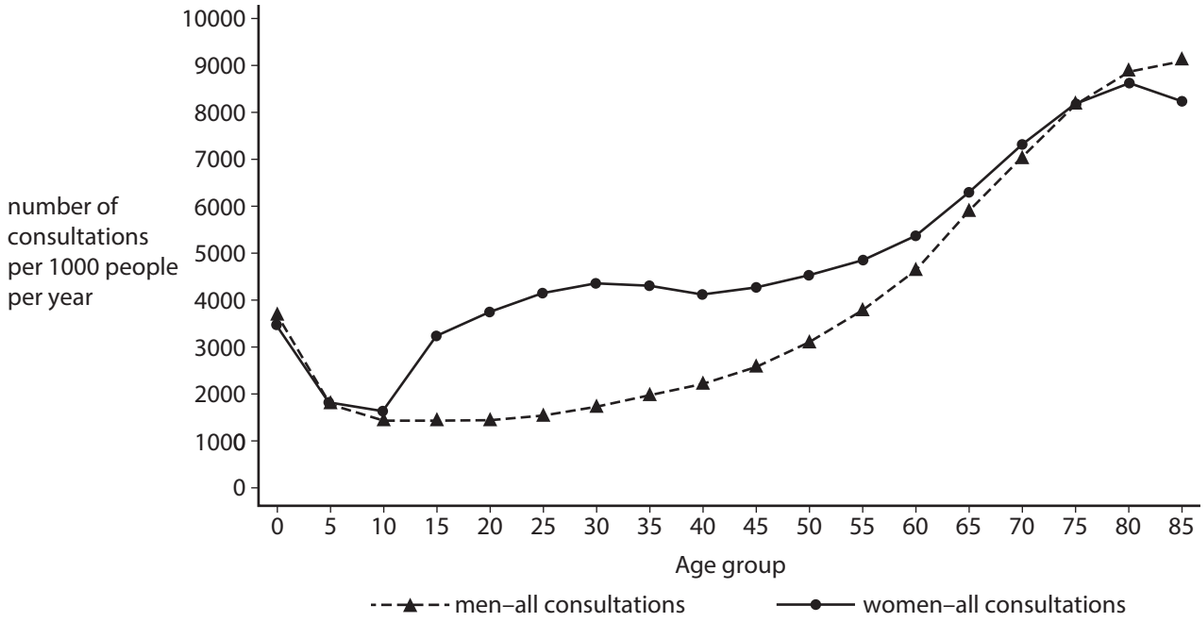

Figure 3

In 2016, funding for sexual health services in the UK was cut by £200 million. According to the Family Planning Association (FPA) this led to an estimated increase of 72,299 people infected with an STI between 2016 and 2020, costing health services an extra £363 million[13].

The greatest barrier to obtaining the appropriate healthcare is the stigma surrounding sex and STIs. A study by the FPA found that over 160,000 fewer chlamydia tests were carried out between 2015 and 2016, a fall of 5%. The media can contribute to fear and shame around STI testing with scare stories, such as reports of 'super gonorrhoea', which can keep people from getting the help they need[14].

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What is being done and what more can we do?

Most STIs can be treated very easily with **oral** or **topical** medication. STIs caused by bacteria can often be treated with antibiotics. Since women often have no obvious symptoms at all, regular testing is extremely important. Early treatment helps prevent serious health problems. Once tested and diagnosed (which can even be done at home) the right treatment can be provided to treat the infection.

Education is also an important factor in minimising the risk of STIs to both men and women. The current National Curriculum for Sex and Relationship Education (SRE) emphasises the risks of STIs and the importance of testing. However, as of September 2020, parents still have the right to withdraw their child from this subject entirely[15]. There are also many resources available both online and at health centres for women and men to learn more about actions they can take to protect themselves and their partners from STIs.

So, the solution is clear in the fight against STIs – stay educated about the symptoms, go to a doctor for a diagnosis, and get treatment if needed.

Glossary

chancre – a sore that develops in the primary stage of syphilis

infertility – the inability to have children

miscarriage – the loss of an embryo or fetus before week 23 of a woman's pregnancy

oral – (medication) taken by mouth, for example liquid medicine or tablets

pelvic inflammatory disease (PID) – an infection of one or more of the reproductive organs, such as the ovaries, fallopian tubes and uterus, in women

prenatal appointment – medical appointment with a doctor or midwife during pregnancy to monitor the developing foetus and the pregnant woman

sexually transmitted infections (STIs) – an infectious disease that can spread from person to person during sexual contact. STIs can also spread from mother to child during pregnancy or birth

stillbirth – the birth of a baby that has died in the uterus after week 24 of a woman's pregnancy

topical – (medication) that is applied to an external surface on the body, such as the skin. The medication could be a cream, gel or ointment.

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All references correct at time of writing.

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14. Kay Devlin, BBC Health [internet], London UK, 15th February 2019; "Super gonorrhoea: Why your STI could become untreatable"; cited May 2020, available from (https://www.bbc.co.uk/news/av/health-47247186/super-gonorrhoea-why-your-sti-could-become-untreatable)

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Set Task

Answer all activities in the spaces provided.

The activities in this task are based on the article.

Use the article and your knowledge and understanding of applied human biology principles, procedures and techniques to support your answers.

1 Discuss how the article uses scientific information to present the sexually transmitted infection (STI) issue.

In your answer, you should consider:

- how the article has interpreted and analysed scientific information to support the conclusions/judgements being made
- validity and reliability.

(12)

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(Total for Activity 1 = 12 marks)

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2 Discuss the key factors affecting the STI issue.

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(Total for Activity 2 = 16 marks)

3 Explain how different organisations/individuals influence the STI issue.

In your answer you should consider:

- research
- health initiatives.

(10)

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(Total for Activity 3 = 10 marks)

4 Suggest potential areas for further development and/or research of the STI issue.

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(Total for Activity 4 = 6 marks)

5 A recent news headline said:

STIs are on the rise – everyone should be tested yearly.

You have been asked to write an article for a health magazine discussing the idea that everyone over 16 years old should be tested for STIs every year.

When writing your article you must consider:

- who is likely to read your article
- what you would like the reader to learn from your article.

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(Total for Activity 5 = 16 marks)

TOTAL FOR PAPER = 60 MARKS

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